

KB



## UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1459  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/863,979	05/23/2001	Gayle W. Miller	98-197/LD	2179
24319	7590	01/02/2004		
LSI LOGIC CORPORATION 1621 BARBER LANE MS: D-106 LEGAL MILPITAS, CA 95035			EXAMINER LUND, JEFFRIE ROBERT	
			ART UNIT	PAPER NUMBER
			1763	

DATE MAILED: 01/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/863,979

Applicant(s)

MILLER ET AL.

Examiner

Jeffrie R. Lund

Art Unit

1763

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 20 November 2003.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 26-37 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 26-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 July 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s): \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other:

**DETAILED ACTION**

***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 26-29, and 32-37 are rejected under 35 U.S.C. 102(b) as being anticipated by Mandal et al, US Patent 5,670,210.

Mandal et al teaches a housing 14 that includes an opening to allow a substrate to pass into the chamber; a rotating chuck 12 for holding and spinning the substrate; a dispersing head 54 to deposit a precursor on the substrate; and a vapor dispense head 20. The showerhead is connected to a catalyst source 34, and a gas mixture source 26 containing nitrogen and water vapor (column 4 line 61 through column 5 line 32). (Figures 1 and 2, and throughout the specification)

The specific substance supplied to an apparatus, the specific substrate processed in an apparatus, the specific carrier gas to vapor ratio, and operating pressures are an intended use of the apparatus. Mandal et al is inherently capable of delivering any substance (solvent or catalyst) to the showerhead, which evenly distributes the substance over the substrate, can be used to process substrates for an integrated circuit or a chemical sensor (or any other device), supply a specific vapor ratio and operate at a specific pressure.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mandal et al in view of Santini, US Patent 4,696,729.

Mandal et al was discussed above.

Mandal et al does not teach that the showerhead is a mesh unit made out of polytetrafluoroethylene materials.

Santini teaches a showerhead that is made out of a perforated plate and an equivalent embodiment in which the showerhead is a polytetrafluoroethylene screen (mesh).

The motivation for using the mesh showerhead of Santini in the apparatus of Mandal et al is to supply a specific type of showerhead as required by Mandal et al but only generically described by Mandal et al.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the showerhead of Santini in the apparatus of Mandal et al.

***Response to Arguments***

5. Applicant's arguments filed November 20, 2003 have been fully considered but they are not persuasive.

In regard to the argument that Mandal et al does not teach a or suggest a vapor dispense head that is configured to receive and introduce a catalyst to form pores in the film and to receive and introduce a gas mixture to maintain capillary pressure in the pores, the examiner disagrees. The applicant has described in the specification a generic spin coating chamber, leaving out the many and obvious details, as is proper, when they can be easily supplied by one of ordinary skill in the art. However, the applicant is required to clearly point out and claim specific differences if the differences are vital to the invention and would not be known to one of ordinary skill in the art (i.e. the dispense head should have a specific pattern of holes to improve uniformity, or be made of a specific material to prevent corrosion or chemical reactions between the material dispensed and the dispense head). The applicant has not disclosed any special structure of the vapor dispense head that is required to introduce the vapor in a uniform manner. Therefore, it is reasonable to conclude that any known dispense head that dispenses a vapor in a uniform manner would work as claimed. Mandal et al has all of the claimed structure, and applicant has not disputed any structural difference. The argument is entirely based on what gas is supplied and how the gas is supplied (i.e. pressure and mixture). Since there is no difference in the structure of the apparatus, the apparatus will always supply the given gas in the same manner. Also, in order to function, the apparatus of Mandal et al must have various controllers to control the gas flow, gas mixture, and chamber pressure as taught by Mandal et al. These various controllers are what enable the apparatus to be configured to supply the claimed materials, because applicant has not disclosed any different structural configuration

other than that known to one of ordinary skill in the art, the apparatus of Mandal is inherently capable of supplying and controlling any commonly used gas or catalysis.

In regard to the argument that "Under the principles of inherency, a claim is anticipated if a structure in the prior art necessarily functions in accordance with the limitations of a process or method claim" (*In re King* as cited by applicant), the examiner disagrees. *In re King* is directed to a 102 rejection in which an apparatus was used to reject a method, because the apparatus in its normal use would necessarily perform the method. The present application is not a method or process claim being rejected by an apparatus. The present invention is an apparatus with a specific use being rejected by an identical apparatus without the disclosed specific use. Therefore, *In re King* does not apply. Furthermore, it has been held that:

- a. Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than function. *In re Danley*, 120 USPQ 528, 531, (CCPQ 1959); "Apparatus claims cover what a device is, not what a device does" (Emphasis in original) *Hewlett-Packard Co. V. Bausch & Lomb Inc.*, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990); and a claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus " if the prior art apparatus teaches all the structural limitations of the claim *Ex parte Masham*, 2 USPQ2d 1647 (Bd. Pat. App. & Inter. 1987). Also see MPEP 2114.
- b. "Expressions relating the apparatus to contents thereof during an intended operation are of no significance in determining patentability of the apparatus

claim." Ex parte Thibault, 164 USPQ 666, 667 (Bd. App. 1969). Furthermore, "Inclusion of material or article worked upon by a structure being claimed does not impart patentability to the claims." In re Young, 25 USPQ 69 (CCPA 1935) (as restated in In re Otto, 136 USPQ 458, 459 (CCPA 1963).

The structure of the apparatus of Mandal et al is identical to the apparatus claimed in the present invention and differs only in how it functions. The specific substrate and gas delivered (i.e. a catalyst to form pores in the film and to receive and introduce a gas mixture to maintain capillary pressure in the pores) are objects that the structure of Mandal et al and the apparatus of the present invention work on.

### ***Conclusion***

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art teaches the technological background of the invention.

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

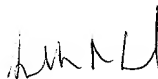
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeffrie R. Lund whose telephone number is (571) 272-1437. The examiner can normally be reached on Monday-Thursday (6:30 am-6:00pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on (571) 272-1439. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Jeffrie R. Lund  
Primary Examiner  
Art Unit 1763

JRL  
December 17, 2003